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Flightfax®

Online newsletter of Army aircraft mishap prevention information

Assessing and maintaining your unit's safety culture

Some things are just worth repeating. Four years ago, this message graced the front page of *Flightfax.* Subsequent messages expanded on the original with modifiers that encouraged a *proactive* safety culture and *engaged* leadership as important elements to fostering a positive culture.

There are many ways to describe a unit's safety culture. In its simplest form, safety culture fosters an instinctive mindset in Soldiers that manifests in their activities, both on and off duty.

Safety culture is not separate or distinct from organizational culture. When done right, safety is an ingrained aspect of an organization's existing culture. A unit's shared beliefs, values and attitudes all contribute to operational safety and efficiency. Soldiers are the key stakeholders in any culture, and leaders must have their buy-in to make safety relevant in their formations.

Safety must not compete with the organization's primary mission. Safety complements, not dictates, mission execution. Much of what our Army does comes with inherent risk, but in the thick of the fight, the Soldiers engaged in actual operations control the mitigation of hazards. Leaders must guide them through holistic risk assessments that account for hazards posed by the enemy, environment, materiel and their own human error, and then give them the latitude to make smart decisions to control aggregate risk.

Risk management is linked to readiness. Safety keeps Soldiers and equipment in fighting condition. Every loss degrades readiness, regardless of the source. Accidental fatalities are senseless because they can often be prevented, and every death leaves a lasting gap in a Soldier's unit and family. To stay ready, Soldiers must stay safe.

Safety must be an imperative, not a priority. An imperative is a "have to do," while priorities can shift due to competing demands. Safety can't slide to the left or right simply because something else might seem more important. In terms of Soldier's lives, there is nothing more important than safety.

Aviation safety is not accidental. It is a deliberate process where members in an organization take the time and effort to effect positive change and foster a safety culture because they care about saving fellow Soldiers' lives.

Readiness through Safety!

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"In flying I have learned that carelessness and overconfidence are usually far more dangerous than deliberately accepted risks." - *Wilbur Wright in a letter to his father, September 1900.*

A Preliminary look at 1st Semi FY17 aircraft mishaps

Manned Aircraft:

In the **manned aircraft** category through March, Army aviation has experienced 25 Class A - C aircraft accidents during the first half of this fiscal year. These mishaps resulted in two fatalities. Three of the accidents were Class A, two were Class B, and 20 were Class C. For comparison, the first semi-annual period FY16 had 36 Class A - C aircraft accidents with six Class A (eight fatalities), nine Class B, and 21 Class C.

The semi-annual Class A flight mishap rate was 0.82 mishaps per 100,000 flight hours. This compared favorably with the total year 0.87 rate for FY16.

	Class A	Class B	Class C
H-60	2	0	8
H-64	1	1	2
H-47	0	1	3
OH-58D	0	0	0
TH-67/OH-58A/C	0	0	0
H-6	0	0	2
C-12/UC-35/FW	0	0	5
Total	3	2	20

Synopsis of selected Manned, Class A and B accidents (OCT 16 - MAR 17):

- H-60M: Unanchored taxiway matting struck aircraft as it was taxiing. Class A damage.
- H-60M: Aircraft crashed during FRIES training.
- H-64D: Aircraft crashed while on a local training area flight. Two fatalities.

Unmanned Aircraft Systems:

In the **unmanned aircraft systems** for the first semi-annual period FY17, there were 27 Class A - C incidents with 10 Class A, three Class B, and 14 Class C. This demonstrates an increase in rates over FY16.

	Class A	Class B	Class C
MQ-1	7	0	2
MQ-5B Hunter	3	0	0
RQ-7B Shadow	0	3	12
Total	10	3	14

Synopsis of selected Unmanned, Class A and B accidents (OCT 16 - MAR 17):

- MQ-1: Mishaps included three engine malfunction/failures, three during the landing phase and one lost link. Mishaps also include one flight into terrain during ATLS landing.
- MQ-5: One engine malfunction/failure and two lost link incidents.
- RQ-7B: Eight engine malfunction/failures, three during the landing phase, one lost link, one ground related incident and one maintenance procedure related mishap.

The Future of Army Aviation: A Change in Aviation Training Philosophy

1LT Austin Welch
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Fort Rucker's Initial Entry Rotary Wing - Common Core (IERW-CC) Course started out a little differently for Class 16-005 as its members arrived at Cairns Army Airfield on January 8, 2016. Instead of boarding the bus to proceed to the traditional TH-67 which has served the Army for over two decades, they instead walked to the new glass cockpit UH-72A, initiating the newest generation of flight training. With significant hours being placed on the aging TH-67, the Army began to seek a modernized replacement airframe compatible with the advanced systems found in the Army's modernized go-to-war airframes. Because the UH-72A had already been fielded by National Guard units, the infrastructure was in place to transition existing 72's to Rucker while fielding new ones. Unlike the single engine TH-67, the UH-72A is an off-the-shelf EC145, dual-engine, glass cockpit airframe that is consistent with the cockpit environment found in the UH-60M, CH-47F and AH-64 D/E. Elimination of the OH-58D, the remaining single engine aircraft in the Army inventory, opened the door for the Army's flight school to fully conform to the modern era of airframes with digital cockpits and fully redundant back-up systems. This enables the student to focus more on optimal crew coordination, mission performance and situational awareness while acting as Pilots in Command rather than being drawn into the cockpit trying to interpret gauges and maintain aircraft stability. The principal focus as distinguished between the TH-67 IERW training and the UH-72 Basic Rotary Wing Skills (BRWS) training is the elimination of compartmentalizing between training phases. Previously, IERW included three phases; Primary (IERW), Instruments (Basic and Advanced) and Basic Warfighter Skills (BWS). The three phases are particularly distinctive because each evolution of training was performed in a different aircraft (TH-67C, TH-67I, OH-58A/C) and with a different IP. This lack in consistency led to the loss of perishable skills in new aviators as they moved through the different phases of training. To counteract this effect, the UH-72 Common Core was divided into BWRS, Advanced Rotary Wing and Instrument Skills (ARWIS) and BWS with each phase being performed in the same aircraft type, with the same Instructor Pilot (IP) through the first 18 weeks of training. The UH-72A IERW-CC Training Model was built with a building block strategy designed to capitalize on the advanced airframe capabilities that relate directly to the go-to-war airframes. The intent was to increase task proficiency and improve the student's ability to perform similar tasks in their go-to-war airframes.

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The biggest improvements from the old TH-67 training model to the new UH-72 training model are that in addition to the normal BWS training, UH-72 Students spend the last two weeks of training becoming night vision goggle (NVG) qualified, establishing another important building block for their follow-on training in their selected warfighter aircraft.

The goal of the UH-72 IERW-CC program of instruction is to prepare aviators for their advanced airframe qualification courses and to replicate what they will see in the field. The use of automatic flight control systems (AFCS) and other stability mechanisms enables students to have greater situational awareness of the aircraft and its mission role. Particularly during the instrument phase of training, the aircraft enables more student involvement during instrument flight rules (IFR) flights in the National Airspace System, supplemented by the extended fuel range of the UH-72A thus enabling students to operate in a variety of environments. Finally, the introduction of practical training in the form of doctrinally accurate tactical contingency operations (CONOPS) enables aviators that are more adaptable. According to DAC Brian Fontenot, the United States Army Aviation Center of Excellence (USAACE) Deputy Chief of Standardizations and a Lakota IP, this enables students to experience full mission briefings, planning cells and execution with all the expectable variables and frustrations. By design, this new IERW-CC training is proving exceptionally capable of leveraging a high degree of aircrew and team (collective) integration enhanced by cutting-edge aircraft technology and systems, structured current and adaptable U.S. Army Aviation doctrine.

-1LT Austin Welch was a graduate of the first UH-72A IERW-CC, Class 16-005 and is now rated in the AH-64D, stationed at Fort Drum, NY. He can be reached at austin.c.welch2.mil@mail.mil

Actual Accident Finding: Learn from the experience of others

FINDING: While leading a nine-aircraft night formation flight encountering decreasing weather conditions, flight lead, in an AH-64A, violated the control measures which were established by the unit standing operating procedures (SOP) for en route weather minimums.

As the weather forced the flight to descend below the established, briefed, 500-foot above ground level (AGL) minimum flight altitude to altitudes as low as 120-feet AGL, flight lead did not properly modify the flight plan and procedures. That is, he elected to continue with the planned mission in unsafe weather while attempting to maintain visual contact with the ground rather than divert or delay the flight for the required minimum mission weather.

He and his flight descended and continued in the unsafe weather without advising the other crews or advising the air mission commander (AMC) for approval. Chalk 7 struck high-tension wires. The wires were struck as the PI of chalk 7 was attempting an immediate landing to ensure safe separation from chalk 6. Chalk 7 sustained visible windscreen damage during the wire strike.

The actions by flight lead were a result of overconfidence and inadequate supervision by the AMC. Flight lead was confident he could continue even with the decreasing weather in that he had use of the forward looking infrared (FLIR).

The AMC, in chalk 4, provided no guidance to flight lead or initiated any on-the-spot corrections after the flight flew into the decreasing weather that was below the SOP - established minimums for operation.

Class A – C Mishap Tables

	Manned Aircraft Class A – C Mishap Table									as of 2 Jun 17
		FY 16					FY 17			
	Month	Class A Mishaps	Class B Mishaps	Class C Mishaps	Fatalities		Class A Mishaps	Class B Mishaps	Class C Mishaps	Fatalities
1st Qtr	October	1	3	7	0		0	0	7	0
	November	2	1	1	6		1	0	4	0
	December	1	1	4	2		1	0	2	2
2nd Qtr	January	0	0	4	0		1	0	2	0
	February	1	1	3	0		0	1	2	0
	March	1	3	2	0		0	1	4	0
3rd Qtr	April	0	1	3	0		1	0	6	1
	May	0	1	6	0		1	0	5	0
	June	1	0	3	0					
4th Qtr	July	0	0	7	0					
	August	1	1	4	0					
	September	1		3						
	Total for Year	9	12	47	8	Year to Date	5	2	32	3
	Class A Flight Accident rate per 100,000 Flight Hours									
	5 Yr Avg: 1.27		3 Yr Avg: 1.32			FY 16: 0.87			Current FY: 0.98	

UAS Class A – C Mishap Table									as of 2 Jun 17
	FY 16					FY 17			
	Class A Mishaps	Class B Mishaps	Class C Mishaps	Total		Class A Mishaps	Class B Mishaps	Class C Mishaps	Total
MQ-1	12	1	2	15	W/GE	8	1	3	12
MQ-5	2		1	3	Hunter	4			4
RQ-7		4	28	32	Shadow		6	20	26
RQ-11			4	4	Raven				
RQ-20					Puma				
YMQ-18									
SUAV					SUAV				
UAS	14	5	35	54	UAS	12	7	23	42
Aerostat	2	1		3	Aerostat	3		1	4
Total for Year	16	6	35	57	Year to Date	15	7	24	46

Mishap Review: AH-64D Ground Taxi

As the crew prepared to taxi, the AH-64D entered into an uncontrolled 135 degree left yaw / tail right and subsequently struck a wash rack curb as well as another parked aircraft.

History of flight

The mission was pre-flight, run-up and conduct Health Indicator Test (HIT) checks to prepare the aircraft for the oncoming crew in support of a training exercise. Weather: scattered clouds at 1,800 feet, winds calm, temp +30° C with altimeter of 29.81. The mission was vocally approved by the company commander. A risk assessment worksheet was not filled out or briefed for the mission.

The duty day started at 0330L with the crews preparing to fly in support of the training exercise. At 0900L the accident crew's mission was canceled. At 0950L the accident crew went out to the oncoming crew's aircraft to prepare it for flight.

During run-up the crew chief announced the tail wheel was unlocked and off axis. The Pilot in Command (PC) announced he would be backing up the aircraft and then attempt to lock the tail wheel as he pulled forward. At 1006L the PC initiated control inputs to move backwards and the aircraft began a left yaw. The aircraft entered into an uncontrolled 135 degree left yaw and subsequently struck a wash rack curb as well as another aircraft. The aircraft sustained significant damage as well as damaging nine other aircraft and causing minor injuries to personnel.

Crewmember experience

The PC, sitting in the back seat, had 628 hours of total time, 537 in the AH-64D with 196 as a PC. The Co-Pilot Gunner, operating from the front seat, had 287 hours of total time and 203 hours in the AH-64D.

Commentary

While controlling the aircraft heading with the pedals, the pilot on the controls must ensure pedal inputs are appropriate to maintain control of yaw. Use left or right pedal input to turn the aircraft in conjunction with applying lateral cyclic as necessary to maintain a level fuselage attitude. Rate of turn will be controlled by pressure and counter pressure on the anti-torque pedals. With the tail wheel unlocked, control the aircraft heading with the pedals and maintain a level attitude with cyclic. ***Note:*** If the tail wheel is unlocked during rearward taxi, the trailing arm tail wheel may swivel 180 degrees, causing momentary heading instability. Use caution so that the tail wheel does not caster around suddenly, as this puts an excessive load on the tail wheel cam.

Additionally, parking pads and utilization of areas such as wash racks or areas designated for maintenance operations should be in accordance with Unified Facilities Codes (UFC). Deviations from the UFC-design must be documented through written procedures that include a hazard assessment and mitigation measures.

Mishap Review: MQ-1C Gray Eagle

During an emergency landing using the Automated Take-off and Landing System (ATLS), turning from base to final, the MQ-1C impacted terrain.

History of flight

The mission was to conduct a Performance Flight Evaluation (PFE) and Readiness Level (RL) progression training flight from an established airstrip in a high desert region with mountainous terrain. The aircrew started their duty day at 1200L. The accident aircrew completed their risk assessment worksheet, was briefed and approved for their assigned mission. The residual risk identified was LOW.

The crew participated in mission brief at 1250L and then proceeded out to the aircraft for preflight. The accident aircrew then conducted mission planning for their flight. Weather at the time of the incident was: temperature of 10° degrees Celsius, 10 miles visibility, clouds few at 8,000 feet AGL, winds out of the southwest at 16 knots, gusting to 21 knots.

At 1643L, the MQ-1C conducted an automatic take-off and landing system (ATLS) take-off from the airstrip. Immediately upon take-off, the crew received a Warning/Cation/Advisory (WCA) indication for “Coolant Level Low.” Following the emergency procedure of “Land as soon as possible,” the crew continued to climb and established the required parameters for an ATLS land mode to be selected. The MQ-1C entered the 3 degree constant profile that was selected. As the aircraft continued its descending right turn from base to final, it impacted the ground at 1652L. Damage was assessed at Class A level.

Crewmember experience

The Instructor Operator (IO) /Aircraft Commander (AC) had 1,107 hours of total time, 36 hours as IO, and 232 hours as AC. The Aircraft Operator had 620 hours of total time and 408 hours as AC. The Payload Operator had 1,704 hours of total time with 699 hours as AC. All three crewmembers had combat experience.

Commentary

- Terrain avoidance systems and warnings are disabled during ATLS land mode.
- While in ATLS mode, ALT AGL 2 represents height above touchdown. There is no display of actual altitude AGL of the aircraft.
- Laser altimeters are only on during the final segment of the approach to ensure safe landing.
- The ATLS runway survey only verifies the points on the runway. The manufacturer verifies that the survey is correct. The survey and the verification from the manufacturer do not account for terrain that may be in the flight path for the selected ATLS landing and take-off profile.
- There is no minimum terrain clearance established for ATLS landings and take-offs.
- Units should include in their reading file information regarding any ATLS profiles that do not provide adequate terrain clearance.

Safe thunderstorms? Not a chance

May 1993 Flightfax

Viewing any thunderstorm as safe is a fallacy; one that could lead to disastrous consequences. There are no safe thunderstorms.

The latest meteorological information shows that all thunderstorms still represent a significant hazard to pilots. Surprised? You shouldn't be. It has been stressed repeatedly that no thunderstorm is safe and all thunderstorms represent a serious threat to pilots. More than 44,000 thunderstorms occur throughout the world each day, and each one contains more energy than was released by both nuclear bombs dropped on Hiroshima and Nagasaki, Japan, combined. With this type of potential energy, clearly no thunderstorm is safe.

Thunderstorm life cycle

A thunderstorm requires three things to develop: unstable air, lifting action and moisture. When these elements come together in the correct order, cumulus clouds develop, which is the first stage of the three-stage life cycle of a thunderstorm.

• **First stage**. All cumulus clouds are supported by updrafts but not all will develop into thunderstorms. If a cumulus cloud is able to continue its vertical development, it is reclassified as cumulus congestus or "towering cumulus." These clouds can have vertical updrafts of 3,000 feet per minute, and the updrafts can extend several thousand feet above the visible cloud top. This represents the true genesis of a thunderstorm. Once the cloud has reached this stage, the release of heat from water droplets in the updrafts provides enough energy to sustain the growth of a thunderstorm.

• **Mature stage**. Because of the strong updrafts, there is little or no falling precipitation in the cumulus stage. The beginning of rain or hail marks the transition into the mature stage because significant downdrafts now exist in the thunderstorm. These downdrafts can average 2,500 feet per minute while the updrafts have strengthened to 6,000 feet per minute.

The mature thunderstorm contains the most energy and is the most dangerous. The coexistence of updrafts and downdrafts can create extreme shear and turbulence that can shred an aircraft to pieces. The opposing drafts can also create hail if a water droplet is repeatedly tossed above and below the freezing level.

When the downdraft reaches the earth's surface, it spreads out laterally and creates a gust front-strong winds that could completely reverse the previous wind direction. This is an extremely dangerous situation for aircraft during takeoffs and landings. Also, during the mature thunderstorm stage, lightning is most frequent, rainfall most intense and the cloud tops will have reached their peaks .

• **Dissipating stage**. The thunderstorm passes into the final dissipating stage of the life cycle when downdrafts become more dominant than updrafts. Updrafts provide the energy to sustain the thunderstorm and when they cease, the thunderstorm falls apart. The anvil top is usually associated with this stage; however, it's important to remember that an anvil top may be present in the latter half of the mature thunderstorm stage. Therefore, severe weather may still be present even when the anvil top is visible.

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The lifespan of a single-cell thunderstorm, from cumulus to dissipation, is about 30 minutes. But most thunderstorms occur in groups. And these multi-cell groups contain thunderstorms in different stages of development. Hence, the gust front from one cell may help strengthen the development of another cell. This is most common when some other system, such as a cold front or squall line, is helping sustain the thunderstorm, and this situation often leads to a severe thunderstorm.

Thunderstorm weather hazards

• **Turbulence**. The strongest turbulence occurs within the cloud because of the strong updrafts and downdrafts. However, severe turbulence can be encountered several thousand feet above the cloud and 20 miles laterally from a storm. It can also exist up to 30 miles downwind in the anvil top.

Closer to the surface, the gust front can affect areas up to 15 miles away, changing the horizontal wind direction an average of 40 percent. Wind speeds can be affected by as much as 50 percent up to 1,500 feet AGL.

Also, there can be secondary and tertiary gust fronts from a storm. Roll clouds, which always indicate areas of strong turbulence, may accompany these gust fronts.

• **Hail.** As a general rule, the larger the thunderstorm, the more likely it will have hail associated with it. Hail can be encountered at 45,000 feet and can be carried as far as 10 miles from the thunderstorm.

• **Icing**. Icing generally occurs where the temperature is between 0° and -20°C, with the most severe icing occurring between 0° and -10°C. The heaviest rainfall and strongest turbulence usually occurs at freezing-level altitude.

• **Lightning.** Lightning occurs at all levels of a thunderstorm and is a frequently reported weather-related incident. Most lightning strikes occur when aircraft are operating in one or more of the following conditions:

-Within 8°C of the freezing level

-Within about 5,000 feet of the freezing level

-In clouds

-In some turbulence

Aircraft are rarely struck by lightning when operating below 1,000 feet AGL. Most lightning is cloud to cloud, and only a small percentage of lightning bolts actually hit the ground. However, it is quite possible to be struck by lightning several miles from a thunderstorm.

• **Tornadoes.** Tornadoes are one of the most feared aspects of severe thunderstorms. They are funnel-shaped vortices of wind several hundred yards wide and have been observed extending out to 20 miles from the main body of the thunderstorm. Wind speeds can reach up to 300 miles per hour, but they move at only an average of 40 miles per hour. Tornadoes usually form on the southern or southwestern flank of the thunderstorm and can last from a few minutes up to 6 hours.

Not all tornadoes can be spotted. When the wind vortice has no associated funnel cloud, tornadoes may be hidden among cumulus clouds or be completely invisible. Even airborne radar cannot spot a spinning column of air. The only way to spot these "invisible tornadoes" is by looking for swirls of dust on the ground or swirls in the clouds.

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Altimeter effects

As a thunderstorm approaches, pressure usually falls rapidly, rises sharply with the gust front and rain showers and then returns to normal as the storm passes. This is a relatively minor concern compared to other thunderstorm hazards, but it can result in significant altitude errors.

Flight procedures

Operators manuals for most aircraft contain a section outlining speeds, configurations and techniques for flying through lightning and thunderstorm areas. In addition to the specific procedures outlined in the aircraft operators manual, the following are some general guidelines to use if you must fly through a thunderstorm:

• Before entering the thunderstorm, use your airborne radar and also call the nearest pilot-to metro-service (PMSV). The weather station can often provide information that the airborne radar cannot.

• Ready your aircraft for the thunderstorm. Turn instrument and cockpit lights full bright. Turn pitot heat on. Tighten and lock safety belts and shoulder harnesses. Set proper power settings.

• Maintain a constant attitude. Do not chase the altitude. This increases stress on the aircraft.

• Do not fly under the cirrus anvil. This area has the greatest chance of severe hail.

• Do not fly near the freezing level. Try to avoid it by at least 8°C.

• Avoid unnecessary maneuvering. Do not turn around. This will increase your time in the storm.

• Once clear of the storm, give a pilot report over the PMSV. Thunderstorms can change quickly, so timeliness is important. While the specific procedures outlined in the aircraft operations manual and these general guidelines are the best procedures to use when thunderstorm penetration is inevitable, they are not an endorsement to fly through any thunderstorm. No one should ever intentionally attempt to fly through, under, or over a thunderstorm. The best rule is *avoid all thunderstorms*.

Thunderstorms are extremely powerful storms that contain many serious hazards to safe flight. *There are no safe thunderstorms*. Flight into a thunderstorm can make severe demands of even the most experienced aviator. Summer flying and the turbulence often associated with it require that you remain constantly alert.

- Then 1Lt Tyan W. Myers, USAF, Assistant Staff Weather Officer, Detachment 9, 1st Weather Group, Ft. Rucker, AL (1993)

Near Miss: A MQ-5B Hunter UAS, with tower clearance, was on takeoff roll on Golf taxiway. A C-12 was given taxi instructions to RWY 05 but was told to hold short of Golf taxiway. The C-12 taxied onto Golf taxiway to hold short of RWY 05. The crew for the MQ-5B saw the C-12 stopped in the taxiway and initiated an abort. The arresting gear for the unmanned aircraft (UA) was on the far side of the C-12 so the crew did S-turns to slow the UA and avoid hitting the aircraft. The UA's wheels went off the taxiway resulting in Class C damage and loss of mission time. **Note:** When operating from airfields with mixed manned and unmanned platforms, it is important for all aircrews to expand their situational awareness on the location of unmanned operating areas and launchers.

Accident findings: From the archives for your review

FINDING 1 (Present and Contributing: Environment)

While hover-taxiing to parking, in a UH-60L, the Instructor Pilot (IP) encountered an unforecasted sudden wet microburst with a severe downdraft wind. As a result, the aircraft entered a left descending yaw from which the crew was unable to recover.

Wet microbursts are environmental events that cannot be seen or forecasted with present meteorological measuring equipment, nor are they visible to aircraft crewmembers. They are a rare phenomenon associated with thunderstorms. The day of the accident, two thunderstorm cells merged and collided with an outflow boundary (the remnants of a previous thunderstorm) to form a wet microburst. This event also created a rapid intensification of the thunderstorms as they moved across the Army Heliport (AHP) and the local flying area.

FINDING 2 (Present and Contributing: Human Error – Leader, Training and Individual Failure):

While conducting a day resupply mission and executing a high altitude pinnacle approach at 7,000 feet Mean Sea Level (MSL) with high gross weight, the IP of the Mi-17v5 failed to properly modify his flight plan and apply the appropriate risk mitigation process before making the decision to allow an inexperienced pilot (who had less than 300 flight hours) to execute an approach into a pinnacle/ridgeline LZ at a high altitude and max gross weight. That is, he instructed his inexperienced Co-Pilot (CP), who did not have any previous high altitude training, to execute an approach in a high altitude environment. The IP's actions were in contravention to common practice. As a result, the aircraft crashed upon entering a non-recoverable state of flight at the end of the approach, while under a limited power condition and in a dangerous area on the leeward side of a pinnacle. The aircraft was damaged, and one crewmember sustained a shoulder injury.

The Board concluded that the IP failed to adequately supervise the CP. That is, he did not properly monitor the flight controls during a steep approach into a high altitude pinnacle LZ. The Board determined that the IP had not received any formalized high altitude training; therefore, he did not understand the aerodynamic phenomenon associated with high altitude operations at high gross weights. Additionally, the Board concluded the IP was overconfident in the CP's ability to execute the approach without any issues. That is, the IP had demonstrated an approach into the accident LZ earlier that day and was confident the Co-Pilot would be able to execute a good approach on the second iteration.

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Selected Aircraft Mishap Briefs

Information based on preliminary reports of aircraft mishaps reported March – May 2017.

Observation helicopters

H-6 

-Crew experienced foreign object damage to the tail rotor during flight. Aircraft was landed w/o further incident. ECOD anticipated to be at the class C level. (Class C)

-Maintenance crew experienced a FADEC engine-abort during ground maintenance that was reported to have been from foreign object induction into the engine. (Class C)

Attack helicopters

AH-64 

-D model. Post-maintenance test flight revealed metal debris on the transmission deck as residual damage from in-flight separation of a torque tube from its mounts. (Class C)

-D model. WSPS cut three power lines during NOE flight. Aircraft landed w/o further incident; post-flight inspection revealed TADS damage. (Class C)

-D model. Aircraft struck wires during NVD flight and landed hard. (Class A)

-D model. Aircraft experienced a #2 engine over-temp condition during a TGT-limiting test. (Class C)

-E model. Inspection subsequent to gunnery training identified a 30mm round embedded in the root fitting of the #2 main rotor blade. (Class C)

Utility helicopters

H-60 

-L model. Aircraft was Chalk 3, in flight of three, conducting a training flight when it crashed subsequent to an inflight emergency. One Crewmember onboard sustained fatal injuries. (Class A)

-L model. Soldier fractured left leg during FRIES training. (Class C)

-L model. Uncommanded release of an external load occurred while on approach to the LZ. (Class C)

-A model. Crew experienced flight control malfunction indications and performed a precautionary/emergency landing. Post-flight inspection revealed abnormal wear to the main rotor system swash plate assembly. (Class C)

-A model. Crew landed subsequent to loss of #1 engine oil pressure during external load training. Inspection revealed absence of oil cap and requirement for engine replacement. (Class C)

-M model. Post-MEDEVAC training-flight inspection revealed damage to FLIR turret and optics associated with ground contact. (Class C)

Cargo helicopters

H-47 

-D model. Aircraft made contact with concrete T-barrier during landing in brown-out conditions. Aircraft was then landed w/o further incident with post-landing damage estimated at the class B level. (Class B)

-F model. Engine over-temp (1,000°C) during engine over-speed test. Crew proceeded with normal shutdown procedures without further incident. (Class C)

Fixed-wing

C-12 

-Aircraft experienced damage to one right-hand propeller blade as a result of separation of the R/H landing gear spar bump stop on touchdown. (Class C)

UC-35 

Aircraft contacted the runway nose-first on landing in crosswind/gust conditions. Nose gear, tire and rim assembly damaged. (Class C)

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Selected Aircraft Mishap Briefs cont.

Information based on preliminary reports of aircraft mishaps reported March – May 2017.

Unmanned Aircraft Systems

RQ-7B 

-Crew received a 'Flight Dynamic Drift' indication shortly after take-off and subsequently lost control link with the aircraft. UAS reportedly entered 'Return Home' mode, after initiating a climb, entered an uncontrolled descent to ground impact. (Class B)

-During the mission, the AV experienced an uncommanded descent. Multiple attempts were made to regain altitude but were ultimately unsuccessful. The FTS was deployed and the AV was recovered. (Class B)

-After touchdown, the UA veered right and ran off the runway. (Class C)

-Shortly after reaching mission altitude, the AV experienced a propulsion failure. The FTS was deployed and the AV was recovered. (Class C)

-UAS flight was terminated with recovery chute deployment after ground operators were reportedly unable to bypass an inflight servo-flap failure indication in order to land the aircraft. System was recovered with damage. (Class C)

-After touchdown, the AV veered off the runway and the right wing collided with stakes holding the arresting gear drum. The main landing gear broke off causing damage to the payload. (Class C)

-Crew received a GPS Fail warning immediately after aircraft launch. Aircraft failed to ascend and struck a 3-foot tall taxiway sign. (Class C)

-Vehicle sustained damage during landing in a crow-wind condition. Damage to right wing tip, main landing gear and aircraft payload. (Class B)

-Vehicle sustained damage to right landing gear and tail subsequent to multiple landing attempts before final touchdown in high wind conditions. (Class C)

-Crew experienced loss of RPM during flight and initiated the flight termination system. Recovery chute was deployed and the vehicle was recovered with damage. (Class C)

-During landing on a gravel surface the nose wheel dug in and sheared. Payload damage reported. (Class C)

-During landing the vehicle missed both primary and secondary arresting gear pendants and impacted the arresting net. (Class C)

-On takeoff the engine shut down resulting in loss of thrust. The vehicle descended into nearby terrain. (Class C)

MQ-1C 

-UAS experienced loss of link and orbited until fuel exhaustion. (Class A)

-Crew experienced an Engine over-speed reading on take-off and subsequently failed to gain altitude. Aircraft ultimately entered auto-abort mode from ATLS, following fuel-jettison, despite operator input attempts, and ultimately descended to ground impact and collision with fence obstacles. Wreckage was recovered. (Class A)

-Operator reportedly lost link on post-landing roll-out; the UAS departed and came to rest off the improved runway. (Class B)

-Crew experienced loss of link with the aircraft during descent for landing. System initiated a lost-link holding status and was able to be recovered following descent to ground contact. (Class A)

MQ-5B 

-UAS reportedly crashed after failing to respond to LOST LINK procedures. (Class A)

-Crew experienced loss of link with the system on take-off. (Class A)

Continued on next page

Selected Aircraft Mishap Briefs cont.

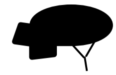
Information based on preliminary reports of aircraft mishaps reported March-May 2017.

Unmanned Aircraft Systems – cont.

RQ-7B

-While returning to base for landing, the TALS was unable to acquire the UA due to a communications failure. Troubleshooting attempts were unsuccessful. The flight termination system was deployed and the vehicle recovered. (Class C)

Aerostats



-Aerostat experienced a tether failure while aloft, reportedly in strong wind conditions. Crew initiated the flight termination system. (Class A)

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UNITED STATES ARMY

COMBAT READINESS CENTER

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